

case of the meteoric "Northers," and to similar views expressed by Professor Loomis at the last meeting of the National Academy at Washington, regretting that he had not had leisure to place all the facts which he had observed and gathered in support of his views before the Society.

Pending nomination No. 780 was read.

Mr. Fraley reported the receipt of the quarterly interest of the Michaux legacy, due April 1st, amounting, with the premium on gold, to \$154.48.

And the meeting was adjourned.

Stated Meeting, May 21, 1875.

Present, 15 members.

Vice-President, MR. FRALEY, in the Chair.

A letter acknowledging the receipt of Proceedings 92 was received from the New Bedford Free Public Library.

Letters of envôy were received from the Asiatic Society of Japan, dated Yokohama, April 5; the United States Coast Survey office; the Norwegian University, Christiana; and Mr. H. Wheatland, Salem, Massachusetts, May 5, 1875.

Donations for the Library were received from the University of Norway; Dr. Boekh; the Royal Society at Göttingen; Royal Academy at Berlin; Horticultural Society, Berlin; Dorpat Observatory; Imperial Geological Institute, Vienna; Société Vaudoise, Lausanne; Editors of *Révue Politique*, Paris, and "Nature," London; Mr. H. Wheatland, Salem; Peabody Museum, Cambridge, Massachusetts; New Bedford Free Public Library; Prof. Dana, New Haven; Buffalo Society of Natural History; Editor of the *American Chemist*, New York; Department of the Interior, U. S.; and Mr. Winchell.

Letters requesting back numbers to complete a set were received from the Royal Academy, Berlin, and Trübner & Co.

Mr. Lesley described the changes made in the theoretical

geology of the country south of Lake Erie, suggested by the work of the New Geological Survey of Pennsylvania; the most important of these changes, namely, the adoption of an east and west strike for a northeast and southwest strike, being necessitated by the probability that most of the exposures of conglomerate throughout Warren, Venango, and Crawford Counties in Pennsylvania, and Cattaraugus and Chautauque Counties in New York, belong to a horizon 200 feet below that of the Great Conglomerate, No. XII, the base of the Productive Coal Measures.

Dr. Cresson referred to the discussion of thermo-electric currents at the last meeting to state his own opinion that it is not needful to have two metals, or an unhomogeneous mass of one metal for the exhibition of such currents. He had found water alone to be a sufficient medium for the production and exhibition of the phenomena under discussion.

The minutes of the last meeting of the Board of Officers and Members in Council were read.

Pending nomination, No. 780, and new nominations, No. 781 and 782 were read.

And the meeting was adjourned.

CONTRIBUTIONS FROM THE PHYSICAL LABORATORY OF THE
UNIVERSITY OF PENNSYLVANIA.

No. I.

A NEW VERTICAL-LANTERN GALVANOMETER.

BY GEORGE F. BARKER, M.D., PROFESSOR OF PHYSICS.

(*Read before the American Philosophical Society, May 7th, 1875.*)

Desiring to show to a large audience some delicate experiments in magneto-electric induction, in a recent lecture upon the Gramme machine, a new form of demonstration galvanometer was devised for the purpose, which has answered the object so well that it seems desirable to make some permanent record of its construction.

Various plans have already been proposed for making visible to an audience the oscillations of a galvanometer needle; but they all seem to have certain inherent objections which have prevented them from coming into general use. Perhaps the most common of these devices is that first